Zomato in Azure:

①. Create a VM in Azure.

Resource Group: It is a container that holds related resources for an Azure solution. Logical Grouping of resources.

Logical Grouping - All resources within a resource group share the same life cycle. You can deploy, manage and monitor resources as a group rather than handling them individually.

② ssh -i zomato.pem username@ip-address

```
  >group
600 — everyone        4 - read
|                     2 - write
user                  1 - execute.
owner
```

chmod 600 zomato.pem → to solve Unprotected private key file
Permission denied.

Successfully logged into VM.

③ secure copy

scp [options] [source] destination

-i -identify file - specifies a private key file for authentication like .pem

-r : recursively copy entire directories.

error → space in source address
→ " " → keep source address in quotes.

```
scp -r -i zomato.pem /zomato ~~/zomato~~ vara@ip-address:/home/
                                                         zomato
```

run this command in your local computer.

(4). Install all neccessary modules : python
mysql
necassary modules in vm

(5) Run the .py file.

-> -> ->

i) Warning : Unprotected Private key file

Modified permisions of private key using chmod

```
chmod 600 zomata.pem
```

in vm :

i) `sudo apt update` - to update package index to ensure we have latest package index.

ii).
```
sudo apt install mysql-server
sudo mysql-secure-installation
sudo mysql - -u root -p
```

set password for root :

```
ALTER USER 'root'@'localhost' IDENTIFIED with
mysql - native-password BY 'new-password';
FLUSH privileges;
```

iii). `sudo apt install python3`

venv - `sudo apt install python3-venr`

```
python -m venv vara/zwiggy
source zwiggy/bin/activate
```

- `pip install -r requirements.txt`

iv). run: uvicorn --reload webapi:app --host 0.0.0.0 --port 8000

why 0.0.0.0 - allows you to access your FastAPI application from outside the VM, which is essential for development, testing and potentially deploying in certain environments.

v). even though I run this I could access the web application. After doing some research I found that, I didn't add an inbound port rule on port 8000 and didn't set up firewall settings.

So, first in NSG (Network Security Group) I created an inbound port rule and in vm I run these commands.

```
$ sudo ufw allow 22/tcp
```

VNet: Virtual Network is a logically isolated network in a cloud environment. It allows you to define and control a network that is private to your cloud resources, providing a way to securely connect virtual machines, databeses and other resources.

But before that, you need to explicitly allow SSH traffic before enabling UFW (Uncomplicated Firewall). Enabling UFW blocks SSH connection. So first run:

```
$ sudo ufw allow ssh (or)
$ sudo ufw allow 22/tcp
$ sudo ufw enable
$ sudo ufw allow 8000/tcp
$ sudo ufw status
```

UFW - firewall management tool

- simplifies the process of managing firewall rules compared to directly using iptables
- provides straightforward commands for adding, removing, and listing rules

Ex: setting the default policy to deny all incoming and outgoing traffic:

```
$ sudo ufw default deny incoming
$ sudo ufw default deny outgoing
```